

REMARKS

I. PRELIMINARY REMARKS

No claims have been amended. Non-elected claim 8-30 have been canceled.¹ Claims 31-38 have been added. Claims 1-7 and 31-38 remain in the application. Reexamination and reconsideration of the application, as amended, are respectfully requested.

II. BACKGROUND AND BRIEF DESCRIPTION OF AN EXEMPLARY EMBODIMENT

The present inventions, as defined by the pending claims, are directed generally to fuel cell systems. As noted in the present specification on page 1, lines 25-29, one problem associated with conventional multi-fuel cell systems is the amount of time required to start the fuel cells within the systems. The present inventions solve this problem by providing systems that are configured such that the output from one fuel cell may be used to, for example, pre-heat the reactants for another fuel cell prior to the actuation of the other fuel cell. When the systems need power from the other fuel cell, the startup time for the other fuel cell will be less than that associated with conventional systems because the reactants for the other fuel cell have been pre-heated prior to startup.

¹ Applicant hereby reserves the right to pursue the inventions defined by claims 8-30 in divisional applications.

III. PRIOR ART REJECTION

A. The Rejection

Claims 1-7 have been rejected under 35 U.S.C. § 103 as being unpatentable over the Japanese Application Publication 2001-52727 (“the JP ‘727 publication”). The rejection under 35 U.S.C. § 103 is respectfully traversed. Reconsideration thereof is respectfully requested.

B. The Legal Standards For a Rejection Under 35 U.S.C. § 103

With respect to the legal standards upon which patentability under 35 U.S.C. § 103 is evaluated, *In re Kotzab*, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000), provides a fairly succinct summary of the standard adhered to by the Federal Circuit:

A critical step in analyzing the patentability of claims pursuant to section 103(a) is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one “to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher.” Most if not all inventions arise from a combination of old elements. Thus, every element of a claimed invention may often be found in the prior art. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant. ***Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference.***

[Citations omitted, emphasis added.] The *Kotzab* decision is also cited in Section 2143.01 of the Manual of Patent Examining Procedure (“MPEP”).

“The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, in some case, the

nature of the problem to be solved. In addition, the teaching, suggestion or motivation may be implicit from the prior art as a whole, rather than expressly stated.” *In re Kotzab*, 55 USPQ2d at 1317. Whether the showing is explicit or implicit, “rejections on obviousness grounds **cannot be sustained by mere conclusory statements**; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), *citations omitted, emphasis added*. To that end, “particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected [the] components for combination in the manner claimed.” *In re Kotzab*, 55 USPQ2d at 1317. “This factual question of motivation is material to patentability, and **[may] not be resolved on subjective belief and unknown authority**.” *In re Lee*, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002), *emphasis added*.

C. Discussion Concerning Claims 1-7

Independent claim 1 calls for a combination of elements comprising “at least first and second fuel cells” and “a first heater arrangement operably connected to the at least one output outlet of the first fuel cell and associated with the at least one reactant inlet line of the second fuel cell such that heat from the first heater arrangement is transferred to reactants in the at least one reactant inlet line of the second fuel cell.” The respective combinations defined by claims 2-7 include, *inter alia*, the elements recited in claim 1.

The JP ‘727 publication fails to teach or suggest the claimed combinations. For example, and referring to Figure 1, the JP ‘727 publication discloses various fuel cell systems in which exhaust 15 from the air electrode 10b is supplied to an air pre-heater 17. After exiting the air pre-heater 17, some of the exhaust 15 is provided to a combustor 18 and the remainder of the exhaust 15 is mixed with new air 25 to form mixed air 27. The mixed air 27 is heated by the air pre-heater 17 prior to entering the air electrode 10b. There is a similar arrangement on the fuel side. Heat from the combustor 18 is used to supply steam to a steam turbine 32. As such, and as noted in the Office Action, JP ‘727

publication fails to teach or suggest that the output of one fuel cell may be used to pre-heat reactant that is to be supplied to another fuel cell.

Faced with this clear difference between the claimed combinations and the teachings of the JP '727 publication, the Office Action simply asserts, based on nothing more than Examiner opinion, that it would have been obvious to modify the systems disclosed in the JP '727 publication such that the output from one fuel cell was used to pre-heat reactant that is to be supplied to another fuel cell. The stated motivation for the purportedly obvious modification was that "preheating reactants for the fuel cell provides improved generating efficiency and use effectiveness of the fuel cell." [Office Action at pages 3-4.] The Office Action apparently based this statement on paragraph 0007 of the JP '727 publication.

Applicant respectfully submits that there are a variety of errors associated with the obviousness assertion and the stated motivation therefore. Most notably, nothing in the JP '727 publication even remotely suggests the purportedly obvious modification of the systems disclosed therein. Turning to paragraph 0007, which supposedly provided the motivation for the modification, paragraph 0007 is nothing more than an "object of the invention" type paragraph. The stated object was to improve efficiency and, as explained in the remainder of the JP '727 publication, efficiency was improved by using the output of a fuel cell to pre-heat reactant that is supplied to **that same** fuel cell.

As illustrated above, the Office Action failed to establish *prima facie* case of obviousness with respect to independent claim 1. The rejection of claims 1-7 under 35 U.S.C. § 103 is, therefore, improper and should be withdrawn.

D. Additional Discussion Concerning Claim 4

With reference to the Examiner's remarks on page 4 of the Office Action, applicant notes for the record that claim 4 does not merely recite pre-heating "the reactants of multiple fuel cells." To the contrary, and in addition to the elements recited in claim 1, the system defined by claim 4 includes "a third fuel cell" and "a second heater arrangement ... associated with the at least one reactant inlet line of the third

fuel cell.” Claim 4 also indicates that the second heater arrangement is “operably **connected to the at least one output outlet of the second fuel cell and to the output outlet of the first heater arrangement.**” Such a system is not even remotely contemplated by the JP ‘727 publication.

Accordingly, for reasons in addition to those discussed above with reference to independent claim 1, the rejection of claim 4 under 35 U.S.C. § 103 is improper and should be withdrawn.

IV. NEWLY PRESENTED CLAIMS 31-38

Newly presented claim 31-38 depend directly or indirectly from independent claim 1 and, accordingly, are patentable for at least the same reasons as claim 1.

V. CLOSING REMARKS

In view of the foregoing, it is respectfully submitted that the claims in the application are in condition for allowance. Reexamination and reconsideration of the application, as amended, are respectfully requested. Allowance of the claims at an early date is courteously solicited.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is respectfully requested to call applicant’s undersigned representative at (310) 563-1458 to discuss the steps necessary for placing the application in condition for allowance.

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 08-2025. Should such

fees be associated with an extension of time, applicant respectfully requests that this paper be considered a petition therefor.

Respectfully submitted,

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Date

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